

**Request to Archive
With The National Centers for Environmental Information
For Radiosonde Atmospheric Temperature Products for Assessing Climate (RATPAC)
Provided by NCDC/GCAD/PDB**

2014-10-10

This information will be used by NCEI to conduct an appraisal and make a decision on the request.

1. Who is the primary point of contact for this request?

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Scientist

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Jeff Arnfield, Jeff.Arnfield@noaa.gov, 828-271-4444, is an alternate contact for this request

2. Name the organization or group responsible for creating the dataset.

DOC/NOAA/NESDIS/NCDC/GCAD/PDB

3. Provide an overview summarizing the scope of data you want to archive. Describe the outputs, data variables, including their measurement resolution and coverage.

RATPAC consists of time series of temperature anomalies at the station and regional-mean level that extend from 1958 to present, updated monthly. Derived from radiosonde observations taken at 85 globally distributed stations with temperature anomaly data provided on 13 atmospheric pressure levels: the surface, 850, 700, 500, 400, 300, 250, 200, 150, 100, 70, 50 and 30 mb. RATPAC data are less influenced by such inhomogeneities as historical changes in instruments and measurement practices.

RATPAC-A:

Contains adjusted global, hemispheric, tropical and extratropical mean temperature anomalies. From 1958 through 1995, they are based on spatial averages of the LKS adjusted 87-station temperature data. After 1995, they are based on the IGRA station data, combined using a first difference method.

RATPAC-B:

Contains data for individual stations as well as large-scale arithmetic averages corresponding to areas used for RATPAC-A. The station data consist of adjusted data produced by LKS for the period 1958-1997 and unadjusted data from IGRA after 1997. The regional-mean time series in RATPAC-B are based on arithmetic averaging of these station data, rather than the first difference method used to create RATPAC-A.

4. What is the time period covered by the dataset? (YYYY-MM-DD, YYYY-MM or YYYY)

From 1958

Ongoing as continuous updates to the data record

5. Edition or version number(s) of the dataset:

Version 1.0 is currently in production, with Version 2.0.0 now in limited beta

6. Approximate date when the dataset was or will be released to the public:

2014

7. Who are the expected users of the archived data? How will the archived data be used?

Users from the public, private and educational sectors will use these data in the study and assessment of long-term climate variations, such as through trend analysis.

8. Has the dataset undergone user evaluation and/or an independent review process? Did NCEI participate in design reviews?

The dataset was created through a collaborative effort involving NOAA scientists from the Air Resources Laboratory (Silver Spring, Maryland), the Geophysical Fluid Dynamics Laboratory (Princeton, New Jersey), and the National Climatic Data Center (NCDC) (Asheville, North Carolina). Several peer-reviewed journal papers have been published regarding this dataset and its methodology.

9. Describe the dataset's relationship to other archived datasets, such as earlier versions or related source data. If this is a new version, how does it improve upon the previous version(s)?

The difference between RATPAC versions 1 and 2 is that in RATPAC 2beta, the portion of the data contributed by the Integrated Global Radiosonde Archive (IGRA) is based on IGRA 2beta (see <http://www1.ncdc.noaa.gov/pub/data/igra/v2beta/igra2-readme.txt>) rather than IGRA 1. While this change in the underlying data results in differences in monthly temperature anomalies at individual stations, particularly after 1997, hemispheric and global trends based on RATPAC-A annual temperature anomalies remain very similar in magnitude. The format of the RATPAC files remains unchanged, and stations continue to be identified by their World Meteorological Organization (WMO) number. One station, Pechora, Russia, underwent a change in WMO number from 23418 to 23415 in the 2000s, and therefore is identified by WMO# 23415 in RATPAC 2beta.

10. List the input datasets and ancillary information used to produce the data.

The "LIBCON" version of the Lanzante, Klein, Seidel (2003) ("LKS") bias-adjusted dataset, derived from NCDC's Comprehensive Aerological Reference Dataset (CARDS) dataset and containing monthly temperatures for 16 atmospheric levels from the surface to 10 mb, from 1948 to 1997. This is a static dataset

Data derived from the Integrated Global Radiosonde Archive version 2 (IGRA2) dataset, updated daily.

11. List web pages and other links that provide information on the data.

<http://www.ncdc.noaa.gov/oa/climate/ratpac/>
<http://www1.ncdc.noaa.gov/pub/data/ratpac/>
<http://www1.ncdc.noaa.gov/pub/data/ratpac/v2beta>

Free M., D.J. Seidel, J.K. Angell, J. Lanzante, I. Durre and T.C. Peterson (2005) Radiosonde Atmospheric Temperature Products for Assessing Climate (RATPAC): A new dataset of large-area anomaly time series, J. Geophys. Res., 10.1029/2005JD006169.

Free, M., J.K. Angell, I. Durre, J. Lanzante, T.C. Peterson and D.J. Seidel(2004), Using first differences to reduce inhomogeneity in radiosonde temperature datasets, J. Climate, 21, 4171-4179.

Lanzante, J.R., S.A. Klein, and D.J. Seidel (2003a), Temporal homogenization of monthly radiosonde temperature data. Part I: Methodology, J. Climate, 16, 224-240.

Lanzante, J.R., S.A. Klein, and D.J. Seidel (2003b), Temporal homogenization of monthly radiosonde temperature

data. Part II: Trends, sensitivities, and MSU comparison, J. Climate, 16, 241-262.

12. List the kinds of documents, metadata and code that are available for archiving. For example, data format specifications, user guides, algorithm documentation, metadata compliant with a standard such as ISO 19115, source code, platform/instrument metadata, data/process flow diagrams, etc.

1. Data format specifications, station lists, country code lists. These include

ratpac-stations.txt	List of stations used in the RATPAC project
ratpac-countries.txt	List of country codes used in the RATPAC station list
readme.txt	a text file describing file organization and layouts
status.txt	Notes on the current status of the online files

ISO-19115 compliant metadata currently under development. Source code is managed in subversion.

13. Indicate the data file format(s).

1. Tabular ASCII text

14. Are the data files compressed?

No

15. Provide details on how the files are named and how they are organized (e.g., file_name_pattern_YYYYMM.tar in monthly aggregations).

RATPAC data files are few and small. They will be delivered for archive as a single monthly package, named as:

ua-ratpac_dYYYYMM_cYYYYMMDD.tar

TAR contents will be:

RATPAC-A-annual-levels.txt
RATPAC-A-seasonal-layers.txt
RATPAC-A-year-to-date-layers.txt
RATPAC-B-annual-regions.txt
RATPAC-B-monthly-00Z.txt
RATPAC-B-monthly-12Z.txt
RATPAC-B-monthly-combined.txt

16. Explain how to access sample data files and/or a file listing for previewing. If it is not available now, when will it be available?

Data files and supporting documentation is available at <http://www1.ncdc.noaa.gov/pub/data/ratpac>, with the version2 specific details in the "v2beta" directory.

17. What is the total data volume to be submitted?

Continuous Data: data volume rate for a continuous data production.

Total Data Volume Rate: 20MB per Month

Data File Frequency: 1 per Month

Data Production Start: 2014

18. Are later updates, revisions or replacement files anticipated? If so, explain the conditions for submitting these additional data to the archive.

Data are updated monthly using latest IGRA2 values.

19. Describe the server that will connect to the ingest server at NCEI for submitting the data.

Physical Location: NCDC, Asheville, NC 28801

System Name: Humboldt (initially), Halo (target for version 2)

System Owner: DOC/NOAA/NESDIS/NCDC > National Climatic Data Center,
NESDIS, NOAA, U.S. Department of Commerce

Additional Information:

20. What are the possible methods for submitting the data to NCEI? Select all that apply.

1. FTP PULL
2. FTP PUSH
3. SFTP PUSH

21. Identify how you would like NCEI to distribute the data. Web access support depends on the resources available for the dataset.

1. Direct download links

22. Will there be any distribution, usage, or other restrictions that apply to the data in the archive?

No known constraints apply to the data.

23. Discuss the rationale for archiving the dataset and the anticipated benefits. Mention any risks associated with not archiving the dataset at NCEI.

RATPAC is an existing product at NCDC and is referenced on our web site. Best practice usually involves archiving such data.

24. Are the data archived at another facility or are there plans to do so? Please explain.

No

25. Is there an existing agreement or requirement driving this request to archive? Have you already contacted someone at NCEI?

RATPAC is an existing product at NCDC.

26. Do you have a data management plan for your data?

No

27. Have funds been allocated to archive the data at NCEI?

No

28. Identify the affiliated research project, its sponsor, and any project/grant ID as applicable.

N/A

29. Is there a desired deadline for NCEI to archive and provide access to the data?

Archive by: 2014

Accessible by: 2014

30. Add any other pertinent information for this request.

None